



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/591,442	06/09/2000	Raife F. Smith II	4366-25	3253

22442 7590 03/19/2004

SHERIDAN ROSS PC  
1560 BROADWAY  
SUITE 1200  
DENVER, CO 80202

EXAMINER

FERRIS III, FRED O

ART UNIT	PAPER NUMBER
----------	--------------

2128

DATE MAILED: 03/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/591,442

Applicant(s)

SMITH, RAIFE F.

Examiner

Fred Ferris

Art Unit

2128

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 09 June 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 February 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 2.6.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### DETAILED ACTION

1. *Claims 1-31 have been presented for examination based on applicant's disclosure filed 9 June 2000. Claims 1-31 have been rejected by the examiner.*

### Drawings

2. *The formal drawing submitted on 21 February 2001 (paper # 4) have been approved by the examiner pending review by the draftsman.*

### Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. *The term "a percentage" in **claims 2 and 10** is a relative term that renders the claim indefinite. The term "a percentage" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. In this case, the term "a percentage" is vague and indefinite since, within the language of the claims, the actual "percentage" used in the step of multiplying "a percentage" of the plurality of packets that corresponds to the **first portion**, is undefined. Similarly, multiplying "a percentage" of the plurality of packets that corresponds to the **second portion** is also undefined.*

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

***4. Claims 1-32 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by "Wide Area ATM Network Experiments Using Emulated Traffic Sources" B. Lee, DARPA Technical Report ITTC-FY98-TR-10980-24, January 1998.***

Independent claim 1, for example, is drawn to:

method for characterizing ATM network packet inter-arrival times by:  
providing first portion of transported packets containing voice and video  
providing second portion of packets containing other than voice and video  
lognormal number generator generating packet arrival times for some of first packets  
normal number generator generating packet arrival times for some of second packets

Regarding independent claims 1, 8, 16 and 26: Lee teaches techniques for the modeling, simulation, and emulation of ATM network traffic and packet **inter-arrival times** between sessions of packets (first, second, etc.) containing **voice and video data** (also graphic & multimedia data, i.e. other than voice and video). Lee further discloses modeling (generating) packet arrival times using **log-normal number distribution** and **normal number distribution**. (Entire teaching, especially: Abstract, pp. 2, 16-31, 37, 38, 47, 48, 59, 63, Figs. 3.1, 3.5, 4.5, Tab. 4.1)

Per dependent claims 2-7, 9-15, 17-25, 27-31: This group of claims is drawn to limitations that include characterizing and modeling (generating) the packet inter-arrival times using log-normal and normal distribution which is disclosed by Lee as cited

*above. Lee further discloses modeling the **mean and variance** of log-normal and normal distribution packet arrival times. (see pages 16, 19, 20, 24, and Figs. 3.1, 3.2)*

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
  2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
- 5. *Claims 1-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,597,660 issued to Rueda et al in view of "Two-State MMP Modeling of ATM superposed Traffic Streams Based on the characterization of Correlated Interarrival Times", S.H. Kang, pp. 1422-1426, IEEE Global Telecommunications Conference, IEEE 1995.***

Independent claim 1, for example, is drawn to:  
method for characterizing ATM network packet inter-arrival times by:  
providing first portion of transported packets containing voice and video  
providing second portion of packets containing other than voice and video

lognormal number generator generating packet arrival times for some of first packets  
normal number generator generating packet arrival times for some of second packets

Regarding independent claims 1, 8, 16 and 26: Rueda discloses techniques for the modeling and simulation of **ATM network traffic** and the **characterization** of packets (first, second, etc.) by the **arrival time** between packets where the packets contain **voice (audio) and/or video** data. Lee further discloses the generation (simulation) of ATM network packets according to the **arrival time characterization** including **mean and variance** modeling. (Abstract, Summary of Invention, CL9-L57-65, CL10-L45, 55-59, CL11-L10-9, 55-65, CL13-L5-59, CL14-L1-53, CL15-L25-CL19-L57, Figs. 1-12, 18)

Rueda implies, but does not explicitly teach characterizing and modeling (generating) the packet inter-arrival times using log-normal and normal distribution.

Kang teaches characterizing, simulation, and modeling (generating) of ATM network packet inter-arrival times using log-normal (logarithmic) and normal distribution. (Entire teaching, Abstract, Introduction, especially: sections II and III)

It would have been obvious to one having ordinary skill in the art at the time the claimed invention was made to modify the teachings of Rueda relating to techniques for the modeling and simulation of **ATM network traffic** and the **characterization** of packets, with the teachings of Kang relating to inter-arrival times using log-normal (logarithmic) and normal distribution, to realize the claimed invention. An obvious motivation exists since this area of technology is highly competitive with many types of ATM network simulators available in the market place and large amounts of money

Art Unit: 2128

*being spent in product development and improvement. (see Saito and Borrella Background, for example) Accordingly, a skilled artisan would have made an effort to become aware of what capabilities had already been developed in the market place and, hence, would have been motivated to modify the teachings of Rueda with the teachings of Kang in order to reduce development time and cost.*

*Per dependent claims 2-7, 9-15, 17-25, 27-31:* *This group of claims is drawn to limitations that include characterizing and modeling (generating) the packet inter-arrival times using log-normal and normal distribution which is disclosed by Kang as cited above. Both Rueda and Kang further disclose modeling the **mean and variance** of packet arrival times. (Rueda CL11-L23-35, Figs. 8, 9, 12, Kang Section II)*

### **Conclusion**

6. *The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.*

*U.S. Patent 6,563,796 issued to Saito teaches modeling and simulation of ATM network packet traffic.*

*U.S. Patent 6,442,141 issued to Borella et al teaches modeling and simulation of ATM network packet traffic.*

*"End-to-End Modeling and Simulation of MPEG-2 Transport Streams over ATM Networks with Jitter" W. Zhu, IEEE Transactions Circuits for Video Technology, Vol. 8, No. 1, February 1998 teaches modeling and simulation of ATM network packet traffic.*

*Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fred Ferris whose telephone number is 703-305-9670 and whose normal working hours are 8:30am to 5:00pm Monday to Friday.*

*Any inquiry of a general nature relating to the status of this application should be directed to the group receptionist whose telephone number is 703-305-3900.*

The Official Fax Numbers are:

Official (703) 872-9306

*Fred Ferris*, Patent Examiner  
Simulation and Emulation, Art Unit 2128  
U.S. Patent and Trademark Office  
Crystal Park 2, Room 5D53  
Crystal City, Virginia 22202  
Phone: (703) 305 - 9670  
FAX: (703) 305 - 7240  
Fred.Ferris@uspto.gov  
March 15, 2004



KEVIN J. TESKA  
SUPERVISORY  
PATENT EXAMINER